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A HYBRID SALMONID.

In the latter part of June, 1918, Mr. John W. Titcomb, State fish culturist of New York, sent to the Bureau of Fisheries a specimen of trout for identification. Mr. Titcomb suspected that it was a hybrid, which it proved to be. The specimen was taken in Bash Bish Brook, near Copake Iron Works, N. Y., where it was stated, besides the brook trout (*Salvelinus fontinalis*), the rainbow trout (*Salmo irideus*) and brown trout (*Salmo fario*) also existed. Structure and color comparisons, and examination of literature pertaining to hybrid salmonidæ lead to the conlcusion that this specimen was a cross between a brook trout and rainbow trout.

The viscera had been removed, but it had the general appearance of a male fish, and its general shape was that of a brook trout.

The arrangement of the teeth on the vomer as observed when in no way disturbed had the typical appearance of a Salmo vomer under the same conditions. When the vomer was removed, however, it was found to be "boat-shaped" with a raised crest much as in the Lake Trout (*Cristivomer namaycush*) but the teeth were arranged on the head and crest in the same manner as on the head and shaft of a Salmo vomer.

If the lighter shade of the fish is regarded as the ground color, the specimen would be said to be light gray and silvery with coarse cloud-marks of dark brown or "zebra markings." The dorsal fin is marked much as in the brook trout. The caudal fin was broken, so that nothing could be determined concerning its markings. The pectorals and ventrals have the outer white ray bordered within by black as in the brook trout. The belly is white with dusky punctulations.

The following dimensions are given in per cent of the body length:

	Hybrid	*Brook Trout*	*Rainbow*
Length in mm. to end of fully developed scales	145	236	261
Distance, tip of snout to nape	17.93	16.9	19.9
Distance, nape to front base of dorsal	32.41	28.1	33.3
Length of base of dorsal	13.79	12.7	15.7
Longest ray of dorsal	16.51	15.5	18.3
Distance from posterior base of dorsal to front of adipose fin	20.68	19.2	19.5
Length of base of adipose fin	4.62	5.6	4.2
Distance from posterior base adipose to base caudal	8.27	10.3	9.5
Least diameter of caudal peduncle	10.34	9.4	10.7
Distance from tip of snout to base of pectoral	31.72	23.9	24.5
Length of pectoral	11.03	17.3	18.0
Distance from base of pectoral to ventral	33.79	30.0	32.5
Length of ventral	14.48	14.1	16.8
Distance from base of ventral to front base of anal	18.62	23.5	22.6
Length of base of anal	9.65	9.4	11.5
Longest ray of anal	15.76	15.9	12.5
Distance from posterior base anal to base caudal	10.34	10.8	10.5
Greatest depth of body	22.06	24.4	22.9
Length of head	26.89	24.8	30.26

The following dimensions are given in per cent of the head length:

	Hybrid	*Brook Trout*	*Rainbow*
Distance from tip of snout to edge of preopercle	76.9	81.1	77.2
Diameter of eye	23.7	17.9	18.9
Length of snout	28.2	29.2	32.9
Length of maxillary (proper)	47.4	49.1	48.1
Length of mandible	62.8	45.3	72.1
Vertical distance from top of head to lower edge of mandible, through middle of eye	46.1	37.6	54.4

	Hybrid	*Brook Trout*	*Rainbow*
Interorbital width	29.48	30.2	31.6
Number of dorsal rays (divided)	10	9	10
" " anal rays (divided)	8	8	9
" " pectoral rays (all)	12	13	13
" " ventral rays (all)	8	8	10
" " Branchiostigal	9 & 8	10 & 11	10 & 11
" " gill rakers, right side	6 & 10	5 & 10	6 & 12
" " gill rakers, left side	6 & 10	6 & 10	6 & 12
" " scales	147	200	145
Sex	male?	male	male

WILLIAM CONVERSE KENDALL,
Washington, D. C.

THE SALAMANDERS OF MONROE AND WAYNE COUNTIES, N. Y.

1. *Necturus maculosus* (Rafinesque) "Lizard." Mud Puppy. Common in the lake and bays of Lake Ontario and not infrequent in the larger tributaries of the lake, e. g., Sandy Creek, Salmon Creek, Irondequoit Bay and Creek. Often caught on night lines or in seines held in swift water just below large flat rocks. Has been taken from April 1-November 24. Mr. S. C. Bishop reports it common in Clyde River.

2. *Notophthalmus viridescens viridescens* (Rafinesque). Newt. Common in swampy creeks and ponds. March 25-November. Eggs, April 15-July 1.

3. *Ambystoma jeffersonianum* (Green). Jefferson's Salamander. Rare. Secured from Duck Lake, Wayne County. Must be more common than present records show because of records at Syracuse, Batavia, and Buffalo.

4. *Ambystoma maculatum* (Shaw). "Spotted Salamander." Common in both counties. Eggs laid March 25-April 30, usually after those of the Jefferson's Salamander.

5. *Hemidactylium scutatum* (Schlegel). Four-toed Salamander. On June 11, 1916, Mrs. A. H. Wright, while searching for the small orchid, *Listera*

australis, found a specimen in the sphagnum of Duck Lake bogs. We have no records of it from Monroe Co., yet it occurs on both sides at Buffalo and in Wayne Co. near Oswego. This leads us to expect it in sphagnous areas in Monroe County.

6. *Plethodon cinereus* (Green). Red-backed Salamander. Lead-backed Salamander. Common in wooded sections and along the Genessee Valley. Taken at Mendon Ponds, Bergen Swamp, Fairport, Powder Mills, Eastman-Durand Park, Duck Lake, Junius.

7. *Plethodon glutinosus* (Green). Slimy Salamander. Secured three in Eastman-Durand Park, Rochester, N. Y., May 18, 1916, and later at Duck Lake, Wayne Co. Mr. S. C. Bishop reports it as common along the Clyde River. In one instance he found 38 adults under one piece of bark.

8. *Gyrinophilus porphyriticus* (Green). Salmon-colored Salamander. Rare on springy hillsides in both Monroe and Wayne counties.

9. *Eurycea bislineata* (Green). Two-lined Salamander. Not uncommon in the Genessee Valley and in clear streams of wooded areas. Taken about Bergen swamp, August 5, 1916, and August 18, 1918, Eastman-Durand Park, Genessee Valley Park, May 18, 1916, and about Duck Lake area, Wayne Co.

10. *Desmognathus fuscus fuscus* (Rafiesque). Dusky Salamander. Not common north of Ridge road in Monroe Co. More common in Genessee Valley, in hilly parts of Monroe County and in Wayne Co. Taken at Hilton, Powder Mills, Mendon, Duck Lake and Junius.

A. H. Wright and Julia Moesel,
Ithaca, N. Y.

SCELOPORUS UNDULATUS (LATRIELLE) FEIGNING DEATH.

Though it is probably known that the common swift (*Sceloporus undulatus*) often "plays possum"

or feigns death when caught, I have seen nothing published on the subject; the following notes are submitted in the hope of eliciting observations from others.

On May 24, 1918, near Petersburg, Va., I had an interesting experience with one of these lizards. When caught in the hand it doubled up its feet and "played possum," and even remained motionless when I placed it upon its back on the ground and stepped away a few feet. However, when placed right-side-up on a log and left alone a moment, it scurried away.

Just one year later (May 24, 1919), I had an opportunity to observe this habit again. Mr. Lewis S. Golsan and I were passing through a piece of mixed woods near Prattville, Ala., when an adult swift darted across the old roadway just ahead of us. I caught it as it attempted to climb a pine to safety and holding it in my palm, stroked its back and then its abdomen with a finger. Like the first, it drew its feet up against its body and then remained motionless, except for an occasional blink of the eyelids. Placing it upon its back among the leaves on the ground, I walked away several feet, but though its eyes were kept open and it could plainly see my every movement, it made no attempt to escape even when I returned and picked it up again. Next I put it upon its back in a bed of bare sand in the middle of the road and stepped away about twenty feet, and though I remained quiet for two minutes the lizard made no move to right itself. After handling it again, I placed it back on the sand in the same position and again moved away about twenty feet and sat down for ten minutes, but still the animal showed no sign of life except the blinking of the eyes when I returned and picked it up. Again placing it up-side-down on the sand I stepped off forty-four yards and remained three minutes, only to return and find the swift just as I had left it. Then I turned it over upon its belly and returned to my observation post forty-four yards

away and waited five minutes. When I went back to the reptile it still lay motionless, with its legs drawn up under it, though my foot was placed within a few inches of it; but when I stooped to pick it up it darted away across the leaves.

This latter individual was under observation for twenty-five or thirty consecutive minutes and during this time did not shift its position. During the entire time the animal was upon its back it maintained a constrained position with the spine curved and the head and tail well off the ground. The feet were drawn up upon the belly and the eyes were kept open; the only perceptible motion about the animal being the occasional blinking of the eyelids.

A young *Cnemidophorus sexlineatus* (Linn.). About half grown, caught by hand on June 5, 1919, showed an entirely different disposition. This lizard was very restless, even in the hand, and the moment it was released, darted away with the speed characteristic of the species.

Ernest G. Holt,
Barachias, Ala.

A NOTE ON THE LENGTH OF LIFE OF SOME BATRACHIANS IN CAPTIVITY.

Do frogs and salamanders die of old age or continue to live until killed by some of their natural enemies? Metchnikoff (Prolongation of Life, 1910) says:

"Not very much is known about the duration of life in batrachians, but it is certain at least that some small frogs may live 12 or 16 years, and toads as many as 36 years."

This problem is very hard to study because it is seldom possible to keep close run of any of these animals when wild, and sometimes hard to tell whether

you are observing the same individual year after year. A little light may be thrown on the problem by watching animals kept in captivity under conditions as nearly natural as possible.

Early in July, 1912, I captured two adults of *Hyla versicolor* and have kept them since in a vivarium consisting of an old aquarium tank a foot wide and two feet long, covered with a pane of glass, floored with moss and planted with ferns and other plants where the frogs could climb. This was kept in the living room where the temperature is comparatively constant. The result of this was that after the first year or two the frogs were more or less active all winter instead of hibernating and this fact may have some bearing on their longevity. They would always eat freely any insects small enough to swallow, their favorite prey being flies and small moths, though cutworms were never refused. Both frogs thrived until the spring of 1919 when one grew thin and died about the first of May. On May 10, the second ate a moth, but a day or two later refused to eat and died May 15, after growing very thin. Seven years plus is all that I can say of the age of these frogs.

In the same vivarium I am still keeping a big specimen of *Ambystoma maculatum* captured in April, 1912. It was seven inches long at that time and doubtless adult, so its age is as uncertain as that of the Hylas.

PHILIP H. POPE,
Manchester, Me.

BLOOD EXPELLING OF THE HORNED LIZARDS IN MEXICO.

In connection with the expulsion of blood from the eyes of horned lizards, it may be of interest to note the names of two Mexican species in which this interesting phenomenon has been observed by a Mexican herpetologist, Sr. Carlos Cuesta Terrón.

Phrynosoma orbicularia Wiegm. and *P. taurus* Cope are both abundant in the Valley of Mexico, and specimens of both species when rubbed on the top of the head have time and again been observed to expel blood from the eyes as a result. This experiment, according to Sr. Cuesta, is almost invariably successful in the afternoons during the summer, or, in other words, when the animal's sensitivity is warmed up to its greatest intensity by the hottest weather. In the winter, or after long confinement in unnatural surroundings, the lizards rarely respond in the same manner.

PAUL D. R. RUTHLING,
Mexico City.

CLEMMYS MUHLENBERGI AT LAKE GEORGE, NEW YORK.

Numbers of northern records have recently been published for Muhlenberg's turtle, and as I have been guilty of overlooking some of these, I take pleasure in calling attention to the northernmost record for this species, which the recent writers on the subject seem to have overlooked.

Dr. A. K. Fisher, in the American Naturalist for 1887, page 672, published a brief note entitled "Muhlenberg's Tortoise (*Chelopus muhlenbergi* Schweigger) at Lake George, N. Y."

The specimens were taken at the head of Dunham's Bay, in a sphagnum bog.

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Alexandria, Virginia.

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